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The Coreidæ of Kansas.*

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INTRODUCTION.

THE purposes of this paper are: (1) to give a list of the species of Coreidæ that have been taken in Kansas to date; (2) to give the counties in which they have been collected; (3) to give the original description of each species found and to give any further characteristics which may aid in the determination of the species; (4) to determine whether the genital capsule and claspers of the male have specific value; (5) to make keys for the separation of the groups down to species.

The material examined is in the Snow entomological collection at the University of Kansas, Lawrence, and in the entomological collection at the Kansas State Agricultural College, Manhattan. The material in the Snow collection is an accumulation of years of collecting by the members of the State University Biological Survey.

* Submitted to the Department of Entomology and the faculty of the Graduate School of the University of Kansas in partial fulfillment of the requirements for the degree of Master of Arts.

Collections have been made in nearly every county in the state. However, most of these surveys were made in the months of June, July and August and, as the Coreidæ as a rule are more numerous in the autumn, it is likely that the distribution of the different species is more extensive than the records show.

The writer wishes to express his appreciation to Dr. H. B. Hungerford, under whose direction the work was done and who gave most helpful advice and criticism; to Prof. Harry G. Barber, of Roselle, N. J., who checked the writer's identifications; to Dr. P. A. Readio and Kathleen C. Doering, for their kindly help and criticism; and to all others who in any way have assisted in this work.

FAMILY COREIDÆ.

The members of this family vary greatly in form. Some of the species are among the largest of the Hemiptera, and others are very small and inconspicuous; some have peculiar expansions or shapes of the tibiæ or antennæ; in some the femora are swollen or armed, or both; and in some the hind coxæ are widely separated, while in others they are contiguous.

The family is characterized as follows: The antennæ are situated above an imaginary line drawn from the eye to the base of the rostrum, and are four-segmented; the vertex of the head is not transversely impressed; the rostrum is four-segmented; the scutellum is triangular and of small or medium size, not reaching the middle of the body; the hemelytra are usually complete and composed of clavus, corium and membrane; the membrane is furnished with numerous veins which spring from a transverse basal vein, and are more or less anastomosing; the tarsi are three-segmented; the ocelli are present.

In the male the last ventral segment is modified to form a secondary sexual organ, the genital capsule. It bears a pair of clasping organs, the claspers, which are attached to the surface, and are concealed in the genital capsule in the members of three of the subfamilies (Merocorinæ, Coreinæ and Pseudophlœinæ).

The species of the family found in Kansas fall into three groups when classified by the genital capsule of the male. The males of the subfamily Coreinæ (Pl. LX, Fig. 5), Merocorinæ (Pl. LX, Fig. 4), and Pseudophlœinæ (Pl. LXII, Fig. 1) have a single convex genital capsule which incloses the claspers, internal genitalia, and the anal segment. The dorsal aspect of this capsule has good specific

characters in all the species examined. The writer made drawings of the ventral aspect of this capsule when that aspect had good specific characters, because the insects can then be identified without relaxing them.

The genital capsules of the males in the subfamily Alydinæ (Pl. LXII, Fig. 5) are not closed at the caudal ends as those of the above three subfamilies, but are open so that the claspers are exposed except in the genus *Stachyocnemus*. The genital capsule is further characterized in the species of *Megalotomus* and *Alydus* by the presence of a pair of hooks on the dorsal surface. Dr. H. B. Hungerford has suggested that these be called "surcapsular hooks," and the writer has so designated them. (Pl. LXII, Fig. 5.) These hooks have specific value, not only from their shape and position but also from the teeth on them. The writer has found no reference to these hooks in the literature.

The genital capsules of the males of the subfamily Corizinæ (Pl. LXII, Fig. 4) are open at the caudal ends as in the Alydinæ, but on the whole they have a bulbous shape as do the genital capsules in the Coreinæ, Merocorinæ and Pseudophlœinæ. The chief characteristic of the genital capsule in this subfamily is the fact that it and the eighth segment are drawn back up into the body so that they are not visible from a ventral aspect. This condition holds true in the female as well, and at first glance it is difficult to distinguish the sexes. The shape and form of the genital capsules in this subfamily are constant for the species, and are good specific characters.

The shape, size and form of the claspers are constant in each species, and are specific. They can be readily seen in the subfamilies in which they are concealed by relaxing the specimens and pulling out the genital capsules.

The family is a large one. Lethierry and Severin (1893-1896) list 1,320 species, which are divided into 29 subfamilies, as occurring in the world. Many species have been described since then. Van Duzee in his catalogue lists 125 species, which are divided among 48 genera and five subfamilies (Merocorinæ, Coreinæ, Pseudophlœinæ, Alydinæ and Corizinæ), as occurring in North America north of Mexico. Two of these subfamilies (Alydinæ and Corizinæ) have been raised to family rank by Parshley (1923) and Blatchley (1926). Representatives of all five of the subfamilies, 21 of the genera and 35 of the above species are found in Kansas. Fourteen of these 35 species have not been recorded from Kansas before.

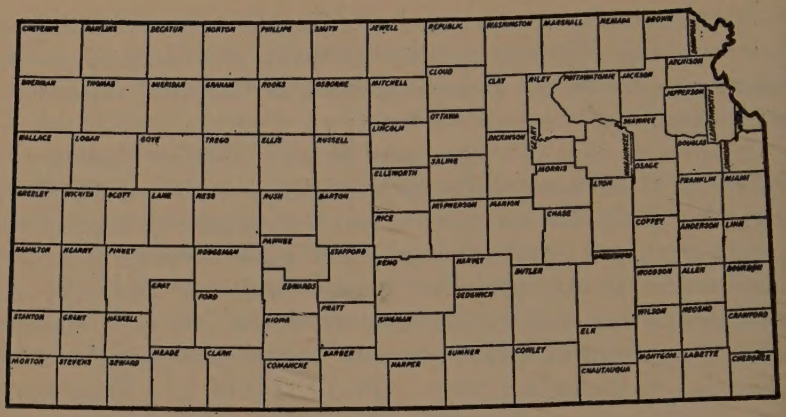

FIG. 1. Outline map of Kansas.

KEY TO THE KANSAS SUBFAMILIES OF COREIDÆ.

PAGE

A. Head large, the part between the eyes wider than the scutellum; body slender. Alydinæ, 387

AA. Head smaller, part between eyes narrower than the scutellum; body rather stout.

B. Metasternal orifices obsolete.....Corizinæ, 393

BB. Metasternal orifices distinct.

C. Hind coxæ contiguous or nearly so; upper surface, except membrane, thickly beset with small granules, each bearing a short seta; first segment of antenna shorter than the head.....Pseudophlœinæ, 386

CC. Hind coxæ widely separated; upper surface not thickly beset with small setæ-bearing granules; first segment of antennæ rarely shorter than the head.

D. Apex of hind tibiæ ending beneath in a short projecting spine; length less than 9 mm. .....Merocorinæ, 374

DD. Apex of hind tibiæ without a projecting spine; length 10 mm. or more .....Coreinæ, 375

SUBFAMILY MEROCORINÆ (STAL).

This subfamily is represented by a single genus and two species in North America north of Mexico. One of the two species occurs in Kansas.

Merocoris distinctus Dallas.

(Pl. LX, Figs. 4, 4A.)

Dallas, William S. List of the Specimens of Hemipterous Insects in the Collection of the British Museum: Pt. II, p. 419; 1852.

ORIGINAL DESCRIPTION (translated by the writer):

"Closely allied to the preceding *Merocoris (M. typhœus* Fabr.); chief difference is that the head is more nearly square, both sides of the front is subspinose; antennæ longer, first and second segments black, third dusky black, punctured, fourth black; posterior tibiæ without curves.

"Female, length, 7/24 inch."

Oblong-oval species of medium size; head small, subquadrangular, porrect, much shorter than the pronotum, armed above near base of each antenna with

a pair of short, widely separated, divergent spines; first segment of antenna stout, subcylindrical, constricted near its base, curved, second and third segments more slender, subequal, fourth segment longer than the second and third combined; beak just reaching middle coxæ; eyes prominent, subglobular; pronotum subquadrangular, sides straight, feebly converging forward from the acute hind angles; scutellum short, triangular, its apex acute; apical margin of corium long, oblique, feebly sinuate, the outer angle acute; membrane reaching tip of abdomen, its veins very numerous, mostly simple, connexivum narrowly exposed; hind coxæ extremely widely separated; apex of hind tibæ ending beneath in a short, projecting spine; hind femora curved, strongly clavate, the basal half very slender, the apical half much thickened, and spined beneath.

Length, male, 6½ mm.; width, male, 2 mm. Length, female, 7.5 to 8.5 mm.; width, female, 3⅜ mm.

DISTRIBUTION. It has been collected in the following counties: Douglas, Franklin, Riley, Sedgwick, Rice, Seward, Sheridan, Rawlins, Logan, Cheyenne, Chase and Sherman.

SUBFAMILY COREINÆ (STAL).

This subfamily is represented in the United States by eight tribes. Representatives of five of these eight tribes are found in Kansas.

KEY TO THE KANSAS TRIBES OF COREINÆ.

PAGE

A. Hind femora not greatly enlarged, rarely spinous, in which case the antennal tubercles are moderate in size and separated by a space greater than their own width.
  B. Posterior tibiæ dilated ..... Anisoscelini, 376
  BB. Posterior tibiæ not dilated.
    C. Antennal tubercles large and prominent, close together, extending much beyond the apex of clypeus; lateral angles of thorax produced in an acute spine; third antennal segment flattened and expanded. Chariesterini, 382
    CC. Antennal tubercles moderate in size, distant, not extending beyond apex of clypeus; lateral angles of thorax not spined, third antennal segment not flattened and expanded.
      D. Second and third antennal segments three-sided; hind tibia three-sided ..... Chelinidini, 382
      DD. Antennæ cylindrical; tibiæ simple, cylindrical..... Coreini, 383
AA. Hind femora spinous or tuberculate, usually much enlarged; antennal tubercles large, separated by a space generally less than their own width.
  B. Clypeus deflexed, not extending much, if any, before antennal tubercles. Mictini, 379
  BB. Clypeus not deflexed, extending much before antennal tubercles. Acanthocephalini, 375

TRIBE ACANTHOCEPHALINI (STAL).

This tribe is represented in North America north of Mexico by one genus. This one occurs in Kansas.

GENUS *Acanthocephala* Laporte.

Five species of this genus occur in North America north of Mexico. One of them occurs in Kansas.

Acanthocephala terminalis (Dallas).

(Pl. LX, Figs. 7, 7A.)

Dallas, William S. List of the Specimens of Hemipterous Insects in the Collection of the British Museum: Pt. II, p. 431; 1852; *Metapodius.*

ORIGINAL DESCRIPTION:

"A blackish-fuscous *Metapodius,* opaque, hairy; antennæ pitch black, last segment golden; tarsi golden, last segment and claws fuscous.

"Length, female, ⅝ inch.

"Above dark brown, opaque, clothed with very short, yellowish hairs, and very thickly and finely punctured. Thorax with the lateral margins smooth, the lateral angles somewhat prominent and obtuse. Scutellum reddish brown. Margins of the abdomen with a small spot at the apex of each segment. Abdomen blackish, somewhat shining, sparingly clothed with short yellow hairs; second and third segments with three small impressed, pale, approximate points on each side of the disc. Breast with a reddish orange spot at each aperature of the odoriferous apparatus; antepectus and the posterior margin of each of the other segments punctured. Legs pitchy, with the four anterior tibiæ brown; thighs serrated beneath; posterior tibiæ not very broad, dilated on the outside to within about one-fourth of their length from the apex, on the inside to about the middle; the margin of the outer dilatation strongly emarginate at the middle; the apical portion of the inner margin of the tibiæ with a few minute teeth; tarsi reddish orange, with the apical joint and the claws brown. Antennæ pitchy black, with the apical joint bright orange.

"North America. From Mr. Children's collection."

The writer finds the length of the females to be from 22 to 25 mm., and that of the males to be from 18 to 22 mm.

DISTRIBUTION. This species seems to be confined to the eastern and central parts of the state. It has been taken in the following counties: Leavenworth, Douglas, Labette, Cherokee, Montgomery, Wilson, Coffey, Riley, Cowley, Sumner, McPherson, Rooks, Graham, Lyon and Chautauqua.

TRIBE ANISOSCELINI.

Van Duzee lists three genera and sixteen species of this tribe as occurring in North America north of Mexico. Four species of one genus (*Leptoglossus*) occur in Kansas.

GENUS *Leptoglossus* Guerin.

Nine species of this genus have been found in North America north of Mexico. Four of these species have been taken in Kansas.

KEY TO THE KANSAS SPECIES OF *LEPTOGLOSSUS.*

PAGE

A. Clypeus projecting in front of genæ, not deflexed.....*clypealis,* 377

AA. Clypeus deflexed in front of genæ.

B. Fourth segment of antenna equal to or shorter than the third; outer dilation of hind tibia not scalloped.....*corculus,* 377

BB. Fourth segment of the antenna longer than the third; outer dilation of the hind tibia scalloped.

C. Side margins of pronotum behind the humeri unarmed; elytra with a very small oblique pale spot on nervure opposite the base of membrane. *oppositus,* 378

CC. Side margins of pronotum behind the humeri crenulate or toothed; elytra with a straight white bar opposite the base of membrane....*phyllopus,* 377

Leptoglossus phyllopus (Linnæus).

(Pl. LX, Figs. 1, 1A.)

Linnæus, Carl. Systema Naturæ, Ed. 12: I, pt. 2, p. 731; 1767; *Cimex.*

ORIGINAL DESCRIPTION (translated by the writer):

"Thorax immaculate blackish; upper wings with a whitish band; hind-shanks membranaceous and toothed.

"Inhabits America."

Linnæus' brief description is scarcely adequate to distinguish *phyllopus* from the other species of *Leptoglossus,* so the writer has redescribed it from the specimens in the entomological collection at the University of Kansas.

SIZE. Length, female, 18 to 21 mm.; male, 17 to 20 mm.

COLOR. Above chestnut brown, thinly clothed with very fine, short, appressed yellow hairs; three narrow stripes on head, and front margin of pronotum dull yellow; first segment of antenna fuscous, second, third and fourth yellow; elytra with an ivory crossbar opposite base of membrane; under surface reddish-brown, mottled with numerous blackish dots, and thickly pubescent with short silver-white hairs; legs reddish-brown.

STRUCTURAL CHARACTERISTICS. Head three-fourths the length of the pronotum, convex; beak long, reaching to or behind the metacoxæ; antennæ with basal segment stout, as long as head, second and fourth segments subequal, longer than the third. Pronotum with humeral angles prominent, slightly projecting upward, their tips feebly toothed. Hind femora slender, the spines beneath relatively small. Inner dilation of the tibiæ much the narrower, reaching the middle of tibiæ, its margin finely toothed; the outer reaching the apical third, its margin with two wide scallops.

DISTRIBUTION. It has been taken in the following counties: Douglas, Pottawatomie, Riley, Dickinson, Saline, Greenwood, Elk, Chautauqua, Cowley, Sedgwick, McPherson, Reno, Clark and Seward.

Leptoglossus corculus (Say).

Say, Thomas. Descriptions of New Species of Heteropterous Hemiptera of North America; New Harmony, Ind.: p. 12; 1832. Transactions of the New York State Agricultural Society: Vol. XVII, p. 770; 1857 (reprinted by Fitch). The Complete Writings of Thomas Say on the Entomology of North America, Vol. I, p. 326; *Anisoscelis.*

ORIGINAL DESCRIPTION:

"Fuscous; antennæ rufous; posterior tibiæ dilated, not sinous.

"Inhabits Florida.

"Body reddish-brown, rather dark, minutely and densely punctured; head simple, with three rufous lines; antennæ rufous; basal joint much shorter than the second, blackish above, second joint longest; ultimate joint rather shorter than the preceding one, fuscous; thorax with the angles not prominent, rounded; scutel undulated on the disc; tergum on the lateral margin with yellowish lines at the incisures; beneath dull rufous with numerous black points; rostrum extending to the middle of the venter; thighs blackish above towards the tip, spinous beneath, posterior pair a little thickened; tibiæ dull yellowish, posterior pair dilated, not undulated on the edge, fuscous with small yellowish spots; the dilation not continued to the tip; inner edge with a few short spines.

"Length four-fifths of an inch.

"I have obtained two individuals on St. John's river. In one of the two specimens the nervures on the middle of the hemelytra are of a paler color, as if, in some individuals, a pale band might exist in that part."

The writer has but one specimen of this species, an unlabeled female, taken from the student collection at the Kansas Agricultural College. This specimen agrees with the original description very closely, especially with one of the specimens that Say collected on the St. John's river, in that the nervures on the middle of the hemelytra are of a paler color.

Leptoglossus oppositus (Say).

(Pl. LX, Figs. 3, 3A.)

Say, Thomas. Descriptions of New Species of Heteropterous Hemiptera of North America; New Harmony, Ind.: p. 12; 1832. Transactions of the New York State Agricultural Society: Vol. XVII, p. 771; 1857 (reprinted by Fitch). The Complete Writings of Thomas Say on the Entomology of North America: Vol. I, p. 327; *Anisoscelis.*

ORIGINAL DESCRIPTION:

"Reddish-brown; hemelytra with a white point in the middle of the corium; antennæ rufous; head trilineated; posterior tibiæ dilated and sinuated.

"Inhabits Indiana.

"This is very closely allied to *albicinctus* Say, but is uniform in its differential characters. It may be known by the small white points of the hemelytra."

Hind femora relatively slender, their teeth relatively short. Hind tibiæ with dilations broadly oval, reaching but little beyond the middle of the tibiæ, the inner more narrow and bearing a few teeth, the outer with two rather deep scallops. Length: Female, 18 to 20 mm.; male, 17 mm.

DISTRIBUTION. It has been collected in the following counties: Douglas, Riley, Sumner and Cherokee.

Leptoglossus clypealis Heidemann.

(Pl. LX, Figs. 6, 6A.)

Heidemann, Otto. The Proceedings of the Entomological Society of Washington: Vol. XII, p. 195, Pl. 8, Fig. 1; 1910.

ORIGINAL DESCRIPTION.

"Body oblong, yellowish-brown, covered with short golden hairs. Head as long as the thorax, narrowing towards the front, the upper part with two parallel black stripes and a short one behind each eye; clypeus not rounded at tip, but conspicuously projecting as a stout spine to nearly the apex of the first antennal joint; rostrum comparatively short, extending to behind the middle coxæ or to the first abdominal segment. Antennæ reddish-brown, about as long as the distance from head to the middle of body; basal joint with a black line exteriorly, equal in length to the third; second and terminal joints subequal. Thorax gradually sloping towards front, finely wrinkled and confluently punctured; lateral margins slightly sinuate anteriorly; the humeral angles bluntly rounded, the edge a little upturned and blackish; the callosities shining black, feebly elevated, separated by a light brown somewhat raised line, continuing faintly backward; the disk of thorax moderately convex, with a few scattered dots; submarginal part of posterior margin depressed, and in front of it a transverse sharp ridge. Scutellum black, the tip yellowish, strongly wrinkled. Hemelytra very finely confluently punctured and with a yellowish-white zigzag band across the corium. Membrane transparent, pale brown, darker at base. Dorsal part of abdomen more or less blackish, the inner sides orange; underside of body pale brown, and dotted black. Legs reddish-brown; hind femora sulcate beneath, armed with a double row of stout black spines; upper side mostly blackish streaked, beset with hardly any tubercles. The membranous expansion of hind tibiæ spatulate-shaped, extending toward apex about

two-thirds, being broadest near the point; the inner side of expansion not much narrower than the other side, edged apically with a few spines, finer ones on a single part of the hind leg; the outer expansion feebly sinuated twice, carrying two spines, the surface of the membranous expansion dark brown, wrinkled, and finely golden pubescent, covered with numerous small yellow spots and a larger transparent one on the inner side. Venter with a shallow sulcation.

"Length, 16 to 20 mm.; width across thorax, 4 to 5 mm.

"Type: No. 13229, U. S. National Museum."

This species is distinguished from the other species of *Leptoglossus* known at present by the stout spine projecting conspicuously from the point of the head.

This species has not been reported from Kansas before.

DISTRIBUTION. It has been collected in the following counties: Douglas, Riley, Dickinson, Saline, Rooks, Decatur, Scott, Gray, Meade, Morton and Stanton.

TRIBE MICTINI (STAL).

There are six genera of this tribe in North America north of Mexico. Representatives of three of these are found in Kansas.

KEY TO THE KANSAS GENERA OF MICTINI.

		PAGE
A.	Antenniferous tubercles spined on the outer side; head with a distinct tubercle behind each eye ..... *Euthochtha,*	381
AA.	Antenniferous tubercles not spined on the outer side; head not tuberculate behind the eyes.	
B.	Truncate hind margin of the pronotum not wider than base of scutellum; groove for receiving tip of rostrum behind front legs ..... *Mozena,*	379
BB.	Truncate hind margin of pronotum distinctly wider than base of scutellum; without groove for receiving tip of rostrum ..... *Archimerus,*	380

GENUS *Mozena* Amyot and Serville.

This genus is represented in North America north of Mexico by six species. One of these has been taken in Kansas.

Mozena obesa Montandon.

(Pl. LX, Figs. 8, 8A.)

Montandon, A. L. Bulletin de la Societe des Sciences de Bucarest, Roumaine: Vol. VIII, Nos. 1 and 2, p. 3; 1899.

ORIGINAL DESCRIPTION (translated by the writer):

"Rather uniform chestnut brown in color; lateral angles of pronotum obtuse, not prominent; abdomen dilated, much rounded on sides.

"Head without punctures, with some very feeble rugosities, scarcely visible, slightly paler on the sides. Antennæ rather slender, a little longer than the head and pronotum together; the first segment dark brown, a little longer than the median part of head but visibly shorter than the second; the third and fourth subequal, each longer than the first.

"Pronotum with dark punctures easily visible on the disk and posteriorly, the free spaces between the punctures glossy and lightly calloused, paler than the punctures, of the same tint as the anterior part of pronotum. The anterior lateral sides straight, scarcely obtusely sinuated, notched by a series of unequal and irregular black tubercles on their anterior two-thirds, the lateral angle straight or very slightly obtuse, not conspicuous, directed transversely, subrounded, apex not acute.

"Scutellum with rather scattered punctures, the spaces between the points slightly elevated into irregular transverse cushions.

"Elytra clear brown, nearly uniformly colored, a little darker on the apical angles, with scattered dark brown punctures. Each sunken point on the elytra as on the pronotum gives rise to a very small golden hair. Membrane brilliant bronze.

"Top of the abdomen rugose; connexivum fully rounded, dark brown with the base of the segments more or less pale; a small, sharp projection at the posterior angle of each of the segments.

"The tip of the rostrum black; fits into a short groove each side of which is bordered by a small, elevated lamella situated on the anterior part of the metasternum behind the anterior leg.

"Legs brown, rugose, the posterior femora of the males more or less reflexed, with two rows of white tubercles on the underside, and some spiny tubercles, very scattered and irregular, on the upper side; the posterior tibiæ slender and curved, with a strong tooth on the middle of their innerside, much narrowed on their apical half, and spiny on this from the median tooth up to the apex.

"The underside of the body brown, more or less rugose, rather uniform, a little clearer on the chest, a small white band on the sides of the abdomen, narrow, irregular, most accented on the fourth and fifth segments.

"Length, 20 to 21 mm. Width between the lateral angles of pronotum 8 to 9 mm.; at the base of the elytra, 7.5 to 8 mm.; across the abdomen, 7 to 10 mm. Florida. (Two males in my collection, received from W. H. Ashmead several years ago under the name of *Archimerus calcarator* F. He did not know their true name.)

"By the form of its pronotum, with the anterior lateral sides nearly straight; the lateral angles a little projecting; the abdomen dilated, noticeably larger than the pronotum, the first segment of the antennæ a little shorter than the second, the insect should not be confused with any of the other species of the genus."

DISTRIBUTION. It has been collected in Rawlins, Barber, Kiowa, Montgomery and Riley counties.

GENUS *Archimerus* Burmeister.

Four species of this genus are listed by Van Duzee as occurring in North America north of Mexico. One of these species has been taken in Kansas.

Archimerus alternatus (Say).

(Pl. LX, Figs. 5, 5A.)

Say, Thomas. Journal of the Academy of Natural Science Philadelphia: IV, p. 317; 1825. Complete Writings of Thomas Say on the Entomology of North America: II, p. 243; *Coreus.*

ORIGINAL DESCRIPTION:

"Fuscous; thighs spinous beneath; margin of the abdomen black, with five white lineolar spots; head mutic.

"Inhabits Missouri territory.

"Body deep blackish brown; eyes rufous, a movable black pupil; stemmata sanguineous; antennæ blackish, tip black; thorax punctured, gradually elevated behind, attenuated before, anterior termination as wide as the base of the head, anterior lateral edge slightly dentate, posterior angles rounded; scutel of the male tinged with rufous; thighs, a double series of hardly prominent, robust spines beneath, of which the two opposite terminal ones are much more prominent, distinct and acute: abdomen, margin black, alternating, with

five oblique white lines; tergum, disc sanguineous; male, posterior thighs much dilated, very robust, slightly tuberculated above, terminal spines not more prominent than the others, a large prominent spine on the inferior middle; posterior tibiæ dentate towards the tip, refracted in the middle, and with a robust, prominent acute spine on the angle.

"Length of the male, more than four-fifths of an inch; female, nearly three-quarters.

"Somewhat similar to *C. galeatus* Fabr., but is considerably larger, the head is unarmed and in other respects sufficiently distinct. It belongs to the genus *Mictis* of Leach."

DISTRIBUTION. It has been collected in the northeastern part of the state in Doniphan, Atchison, Leavenworth, Douglas, Shawnee and Riley counties.

GENUS *Euthochtha* Mayr.

Van Duzee, in his catalogue of Hemiptera of North America north of Mexico, lists one species of this genus. This one occurs in Kansas.

Euthochtha galeator (Fabricius).

(Pl. LX, Figs. 2, 2A.)

Fabricius, Johann Christian. Systema Rhyngotorum Secundum Ordines, Genera, Species, etc.: p. 191; 1803; *Coreus*.

ORIGINAL DESCRIPTION (translated by the writer):

"Thorax serrated fuscous, antennæ pale; posterior femora elevated and toothed.

"Inhabits the Carolinas. Type specimen in the Museum Dom. Bosc.

"Size and form of C. *marginati*. Antennæ pale, last segment fuscous. Head small, acute at both sides of the base of the antennæ. Thorax fuscous, the posterior margin serrated and elevated, feebly spinose. Elytra punctated. The underwings slightly yellow. Legs fuscous, posterior femora thickened, curved, toothed."

SIZE. Length, 15 to 17 mm.; width, 5 to 6.5 mm.

COLOR. Dull yellow or reddish-brown above, thickly marked with fuscous punctures. Antennæ reddish-brown or full yellow, the terminal joint darker. Connexivum reddish-brown, the margins of segments fuscous and marked with yellow, under surface yellow or reddish-brown sprinkled with fuscous dots. Legs the same except the hind tibiæ are paler, immaculate. Pronotum finely and irregularly punctuate. Scutellum finely transversely rugose. Elytra punctate, each puncture having a small yellowish scale.

STRUCTURAL CHARACTERISTICS. Body elongate-oval, depressed above, subconvex beneath. Head short, subquadrangular, broader across the eyes than the apex of pronotum; antenniferous tubercules prominent, extending much beyond the clypeus, which is deflexed, armed on the outside with a small blunt spine. Antennæ slender, the basal segment twice as long as the head, the second and third more slender, the second longer than the third, the fourth stouter, slightly shorter than the third. Rostrum reaches the middle coxæ. Pronotum with front angles produced as a short tooth, basal margin truncate, wider than the scutellum, lateral angles obtuse. Connexivum exposed. Membrane reaches the tip of the abdomen. Femora all armed beneath, the hind ones of male curved and swollen. Tibiæ straight.

DISTRIBUTION. Seems to be confined to the eastern part of the state. It has been found in Leavenworth, Johnson, Douglas, Miami, Linn, Bourbon, Cherokee, Neosho, Osage, Wilson, Chautauqua, Cowley, Riley, Montgomery and Phillips counties. Phillips is in the north central part of the state.

TRIBE CHARIESTERINI (Stal).

This tribe is represented in North America north of Mexico by one genus, *Chariesterus* Laporte. Van Duzee (1917) lists three species of this genus as occurring in North America north of Mexico, but since then Fracker (1919) has described a new species. Of these four species one occurs in Kansas.

Chariesterus antennator (Fabricius).

(Plate LXI, Figs. 4, 4A.)

Fabricius, Johann Christian. Systema Rhyngotorum Secundum Ordines, Genera, Species, etc.: p. 198; 1803; *Coreus*.

ORIGINAL DESCRIPTION (translated by the writer):

"Thorax obscurely serrated, the next to the last segment of the antennæ with a dilated compressed membrane.

"Inhabits the Carolinas. Type specimen in Museum Dom. Bosc.

"Medium sized. Antennæ dark; second segment scabrous, third dilated and membranous, the last claviform. Head, thorax and elytra dark fuscous. Margins of thorax very serrated. Abdomen reddish."

SIZE. Length, 11-14 mm.; width across pronotum, 3-4 mm.

COLOR. Dark brown, with sparse short, appressed brownish-yellow hairs. Dilation of third antennal segment, spines along lateral margins of pronotum, margins of abdomen, beak and tarsi fuscous. Whitish beneath.

STRUCTURAL CHARACTERISTICS. Elongate, slender, depressed above, subconvex beneath. Antennæ with basal segment twice the length of head, third with apical half dilated to form a thin, oval plate, fourth fusiform, shortest. Apex of pronotum but one-third the width of base; front and hind margins of humeral angles toothed, the tip ending in a short, acute spine; posterior margin slightly concave.

DISTRIBUTION. A common species throughout the state. It has been collected in the following counties: Atchison, Leavenworth, Johnson, Miami, Linn, Bourbon, Neosho, Douglas, Riley, Saline, Chautauqua, Cowley, Sumner, Sedgwick, Kingman, Reno, Ellsworth, Rush, Osborne, Phillips, Rooks, Ellis, Kiowa, Clark, Gray, Gove, Decatur, Rawlins, Cheyenne, Wallace, Hamilton, Morton, Lyon, Pratt, Graham and Finney.

TRIBE CHELINIDINI BLATCHLEY.

Blatchley (Heteroptera of Eastern North America, 1926) erected this tribe for the genus *Chelinidea*. There are two species of this genus found in North America north of Mexico. One of them is found in Kansas.

Chelinidea vittiger Uhler.

(Pl. LXI, Figs. 2, 2A.)

Uhler, Phillip Reese. Transactions of the American Entomological Society: Vol. II, p. 366; 1863.

SIZE. Length, 13 to 15 mm.; width across pronotum, 5 to 5.5 mm.

COLOR. Clay yellow, glabrous; head and antennæ brownish-fuscous, head with a broad median yellow stripe; anterior and posterior margins of pronotum, scutellum and membrane fuscous-brown or sometimes darker; elytra dull yellow with dense fuscous punctures, basal half of costal margin and veins yellow; connexivum yellow, immaculate; beneath uniform yellow. The color of the elytra varies considerably. McAtee (1919) has made two subspecies, and each of these subspecies has a color variety.

STRUCTURAL CHARACTERISTICS. Body oblong-oval, depressed above, subconvex beneath, a plump-bodied species. Head subcylindrical, porrect, three-fourths or more the length of pronotum, narrowed and pushed forward in front of bases of antennæ; genæ shorter than clypeus which is strongly deflexed between them; antenniferous tubercles small, widely separated. Antennæ stout, as long as head, pronotum and scutellum combined; basal segment stout, curved half the length of head, second and third segments three-sided, subequal, fourth shortest, fusiform. Pronotum densely punctate, the humeral angles lower than the intervening parts, apex one-half the greatest width. Scutellum transversely wrinkled. Elytra rather closely and evenly punctate. Front and middle femora each with two or three short spines on the inner lower margins near apex, and one or two on the outer. Tibiæ straight, three-sided. McAtee (1919) divided the species into subspecies on the degree of carination of the pronotum and the prominence of the anterior, lateral pronotal tubercles. He keys out the two subspecies as follows:

A. Pronotal margin more elevated anteriorly, with a distinct notch at base of short, rather blunt, and outwardly directed postocular spine.....*vittiger* subspecies *vittiger*.

AA. Pronotal margin less elevated anteriorly, sometimes not even carinate (almost evenly rounded); postocular spine reduced to a mere blunt tubercle or even entirely lacking. *vittiger* subspecies *æquoris*.

This species has not been reported from Kansas before.

DISTRIBUTION. It has been taken in Douglas, Franklin, Anderson, Neosho, Wilson, Chautauqua, Greenwood, Chase, Phillips, Rooks, Rush, Clark, Gove, Logan, Wallace, Hamilton, Stanton and Morton counties.

TRIBE COREINI (STAL).

Nine genera of this tribe occur in North America north of Mexico. Two of these genera are represented in Kansas.

KEY TO THE KANSAS GENERA OF COREINI.

		PAGE
A.	Head very broad, subdepressed; articulation of antennæ cephalic, guarded beneath by an expanded plate of genæ; scent-gland orifices without buttonlike prominence at the anterior margin.....	*Catorhintha*, 384
AA.	Head narrower and more convex; articulation of antennæ laterocephalic, not guarded beneath by an expanded plate of the genæ; scent-gland orifices with a round buttonlike prominence at the anterior margin.....	*Anasa*, 384

GENUS *Catorhintha* Stal.

Van Duzee lists four species of this genus as occurring in North America north of Mexico. Fracker (1923) described a new species. He also places *Ficana apicalis* Dallas in this genus. Of these six species but one occurs in Kansas.

Catorhintha mendica Stal.

(Pl. LXI, Figs. 6, 6A.)

Stal, Carl. Enumeratio Hemipterorum: Vol. 4, p. 187; 1870.

ORIGINAL DESCRIPTION (translated by the writer):

"Yellowish-gray, dorsal surface dotted with fuscous; antennæ, rostrum, except apex of first segment, spines of the antenniferous tubercle and the dorsal side of the abdomen, black; ventral margin of connexivum spotted with black, three black spots on sides of pectoris, and a series of six black spots on each side of venter; underside of legs sprinkled with black; apex of third segment and occasionally the apex of fourth segment of the antennæ yellowish-white or pale yellow; two pale yellow spots on dorsal surface of abdomen, yellow spots or bars on connexivum, posterior-lateral margin of thorax and apex of scutellum pale yellow, two small yellow spots on the corium, one median behind the disc, the other faded on the margin of the apex.

"Most like *Catorhintha guttula* (Fabr.), differing only in being larger, under margin black spotted, and underside of legs densely sprinkled with black.

"Countries: Texas, Mexico."

DISTRIBUTION. It has been collected in Atchison, Johnson, Miami, Linn, Bourbon, Allen, Franklin, Douglas, Osage, Montgomery, Riley, Chautauqua, Cowley, Rush, Pratt, Barber, Comanche, Kiowa, Ellis, Phillips, Norton, Decatur and Rawlins counties.

GENUS *Anasa* Amyot and Serville.

Seven species of *Anasa* are known from North America north of Mexico. Three of these occur in Kansas.

KEY TO THE SPECIES OF *ANASA*.

		PAGE
A.	Head armed with a long spine on each side, one-third as long as first antennal segment	*armigera*, 386
AA.	Head not armed with spine.	
B.	Head marked with two black or black-dotted longitudinal lines.....	*tristis*, 384
BB.	Head without longitudinal black lines.....	*repetita*, 385

Anasa tristis (De Geer).

(Pl. LXI, Figs. 7, 7A.)

De Geer, Carl. Memoires pour servir a L'histoire des Insectes: Vol. III, p. 340, Pl. 34, Fig. 20; 1773; *Cimex*.

ORIGINAL DESCRIPTION (translated by the writer):

"That bug found all over Pennsylvania by M. Acrelius is the size of an oxfly; the body elongated, the abdomen concave on the upperside but very convex on the under side; the antennæ, which are half as long as the body, are four-segmented; the first and last segments are longer than the others. The pronotum is triangular with the lateral angles obtuse.

"The head, the pronotum and the elytra are obscure, brown above, garnished with a great number of glossy black dots; but the membranous portion of the elytra is nearly black and the wings are also black. Beneath the body is gray cinnamon, a little russet, uniformly covered with little concave points. The sides of the prothorax are bordered with gray. The antennæ are brownish-black; the legs brown with black dots; the top of the abdomen is all black. The sober and obscure color of this bug gives it an air of sadness."

This is the squash bug of literature, and as it is the most common, most injurious and the best-known species of the family Coreidæ, that name has been adopted as the common name of the family. It varies a great deal in size. Length, 13 to 18 mm.; width across pronotum, 4.2 to 6 mm.

DISTRIBUTION. It has been collected in Johnson, Miami, Linn, Leavenworth, Douglas, Osage, Riley, Chautauqua, Harvey, Rice, Barton, Decatur, Gove, Gray, Logan, Scott, Finney, Sherman and Morton counties.

Anasa repetita Heidemann.

(Pl. LXI, Figs. 8, 8A.)

Heidemann, Otto. Proceedings of the Entomological Society of Washington (D. C.): VII, p. 11; 1905.

ORIGINAL DESCRIPTION:

"Elongate-oval, uniformly brown or light brown. Upper surface of body, and breast, with irregular rows of dark punctures; from each puncture arises a short, stiff, golden bristle; abdomen transversely wrinkled, the punctures somewhat obsolete, with finer and longer hairs which are more closely placed on the apex of the abdomen. Head without a spine or tubercle near the antennæ; ocelli amber colored, blackish-edged behind; antennæ moderately long and finely pilose; basal joint one-third longer than the head, gradually curved, brown, with a black line exteriorly and a few black dots, the black line even reaching the antenniferous tubercle; second joint a little longer than the first; the third nearly equal in length with the second, both joints about half as thick as the basal joint, black, narrowly yellowish-white at base; terminal joint shorter, fusiform and orange colored. Rostrum reaching the middle coxæ, light brown, black at tip. Thorax broader than long; the disk feebly convex, in the middle a longitudinal narrow, smooth whitish line; lateral margins slightly sinuate anteriorly, and obtusely rounded posteriorly near the humeri; the anterior margin less than half as broad as the posterior; the latter considerably depressed and straight, the transverse raised line above the margin well defined. Scutellum wrinkled; at the basal corners a triangular black spot, and also one at the tip. The disk of the corium has a few dark speckles, formed by the more or less confluent punctures. The membrane brownish and sprinkled with some large black dots, the base darker. The connexivum is edged with white and black lines, and has on the incisures broad, whitish transverse bands. Abdomen much rounded, luteous, on the sides of the segments a few black spots; also, one or two near the base of the coxæ. Feet yellowish-white and dotted with large black spots.

"The genital segment of the male is quite remarkable; it is a little longer than broad, with a transverse, shallow line before the middle, the base convexly rounded and sloping abruptly toward the apex, which is truncate, very feebly indented in the middle, with the corners decidedly humplike in form.

"Length, ♀ 15 mm., ♂ 12 mm.; width across the thorax, ♀ 6 mm., ♂ 5 mm.

"Type, No. 8217, U. S. National Museum."

This is the first record that the species has been taken in Kansas.

DISTRIBUTION. It has been taken in Douglas and Riley counties.

Anasa armigera (Say).

(Pl. LXI, Figs. 5, 5A.)

Say, Thomas. Journal of the Academy of Natural Sciences of Philadelphia: IV, p. 319; 1825. Complete Writings of Thomas Say on the Entomology of North America: II, p. 243; *Coreus.*

ORIGINAL DESCRIPTION:

"Brown, feet white, spotted with black; head spinous above the antennæ; margin of the tergum black, with five white lineloar spots.

"Inhabits Missouri territory.

"Body brown above, beneath pale; eyes prominent rufous; stemmata sanguineous; above the origin of each antenna an elevated, prominent acute spine, half as long as the basal joint of the antenna; antennæ first joint white spotted with black, second and third black, white at base and tip, terminal joint rufous; thorax punctured, elevated behind, descending almost vertically and attenuating to the head; anterior lateral edge dentate, posterior angles dilated and terminated in an angle, from whence the posterior margin descends sinuously and obliquely, terminating in a short acute spine each side of the base; base transversely rectilinear; scutel with three black spots at base; hemelytra, a white oblique line in the middle on the membranaceous portion; tip blackish; feet white, spotted with black; thighs armed at the tip beneath with two short acute spines; tergum sanguineous, base, tip and margin black the latter with five white oblique lines; venter pale, spotted with black.

"Length of female eleven-twentieths of an inch.

"I have not seen the male of this species; it bears a general resemblance to *C. galeatus* Fabr., and is about equal to that species in magnitude, but it may be at once distinguished by the white transverse line at the base of the membranaceous portion of the hemelytra."

The length of the specimens that the writer has examined varies from 13 to 17 mm.; width across the pronotum, 4.5 to 6.5 mm.

DISTRIBUTION. It has been taken in Douglas, Leavenworth and Riley counties.

SUBFAMILY PSEUDOPHLŒINÆ (STAL).

There are two genera of this subfamily in North America north of Mexico, each of which has two species. One species of one genus occurs in Kansas.

Coriomeris humilis (Uhler).

(Pl. LXII, Figs. 1 1A.)

Uhler, Philip Reese. Notices of the Hemiptera of the Western Territories of the United States, Chiefly from the Surveys of Dr. F. V. Hayden (in F. V. Hayden: Preliminary Report of the United States Geological Survey of Montana and Portions of Adjacent Territories for 1871): p. 403, 1872; *Dasycoris.*

ORIGINAL DESCRIPTION:

"Closely resembling *D. pilicornis,* Burm., of Europe, but rather more slender; the head longer and the antennæ more slender. Fuscocinereous, or pale fulvogriseous, hispid; the head pale beneath; on the sides is a dark brown stripe running from the antennæ to the base, tylus carinately elevated. Antennæ having the second joint distinctly shorter than the third, the fourth pale fuscous, about equal to the third joint in length, antenniferous spines very short, small. Rostrum reaching to the intermediate coxæ; the tip piceous. Pronotum remotely punctured, beset with numerous granular processes, densely

clothed with gray pubescence; the lateral margins, with their close-set, short, teethlike processes, whitish; humeral angles with an acute, fuscous tooth, stouter and not so long as that in *D. pilicornis*. Pectus pale clay yellow, or even whitish, closely, coarsely punctured, granulated, and with whitish, somewhat matted pubescence. Legs pale clay yellow; the femora granulated, pubescent, mottled with brown; tibiæ darker at tip; the tarsi somewhat embrowned, and the nails piceous. Mesosternum blackish. Scutellum coarsely punctured, covered with dense, whitish pubescence; the tip white. Hemelytra best with coarse, brown granules and short, whitish pubescence; the embolium grooved, flecked with brown; membrane pale, the nervures interruptedly brown. Connexivum with pale, transverse lines, between which are fuscous clouds. Venter minutely wrinkled, closely punctured; the pubescence minute, whitish; the basal segments having several brown points each side, and usually with a series on each side of all the segments; the lateral margins interruptedly infuscated.

"The posterior femora usually have two spurs beneath, near the tip, and two or three small teeth close to the tip. Sometimes the two longitudinal nervures of the corium are interruptedly fuscous.

"Length of tip of venter, 8.5 to 9 mm. Width across the humeri, 2 to 2.25 mm."

The writer has seen but two specimens taken in Kansas, a male and female from Gove county.

SUBFAMILY ALYDINÆ (AMYOT AND SERVILLE).

This subfamily is given family rank by Parshley (1923) and Blatchley (1926). Blatchley changes the name of the family to Coriscidæ (Blatchley; W. S. Hemiptera of Eastern North America: p. 256). There are three tribes in this subfamily in North America north of Mexico. Tribe I, Micrelytrini (Stal), has four genera, one of which, *Darmistus*, is represented in Kansas. Tribe II, Leptocorisini, is not represented in Kansas. Tribe III, Alydini, is represented in North America north of Mexico by six genera, four of which (*Megalotomus, Alydus, Tollius* and *Stachyocnemus*) occur in Kansas.

KEY TO THE KANSAS GENERA OF ALYDINÆ.

PAGE

A. Posterior femora not armed with spines.....*Darmistus*, 387

AA. Posterior femora armed beneath with a row of spines.

B. Scent-gland orifices distinct; antennæ with fourth segment subequal to the second and third segments together.

C. Antennæ with first segment longer than the second.....*Megalotomus*, 388

CC. Antennæ with first segment shorter than the second.....*Alydus*, 388

BB. Scent-gland orifices obscure or obsolete; antennæ with fourth segment much shorter than second and third together.

C. Posterior tibiæ unarmed .....*Tollius*, 392

CC. Posterior tibiæ armed with two rows of strong spines....*Stachyocnemus*, 393

GENUS *Darmistus* Stal.

This genus is represented in North America north of Mexico by one species. This one occurs in Kansas.

Darmistus subvittatus Stal.

(Pl. LXII, Fig. 11.)

Stal, Carl. Oversigt af Kongliga Vetenskaps-Akademiens Forhandlingar: Vol. XVI, p. 469; 1859.

ORIGINAL DESCRIPTION (translated by the writer):

"Pale yellowish-gray, dorsal surface with pectoris distinctly punctated, two fuscous lines on the head and four faint ones on the thorax, the hemelytra distinctly punctated with fuscous; black lines on the ventral surface of head, and a black medioventral line on the pectoris.

"Male, 9 mm. long and 2 mm. wide.

"Texas."

This species has not been reported before as occurring in Kansas.

DISTRIBUTION. It has been taken in Decatur county.

GENUS *Megalotomus* (Say).

This genus is represented in North America north of Mexico by one species. This one occurs in Kansas.

Megalotomus 5-spinosus (Say).

(Pl. LXII, Figs. 10, 10A.)

Say, Thomas. Journal of the Academy of Natural Sciences of Philadelphia: Vol. IV, p. 323; 1824. Complete Writings of Thomas Say on the Entomology of North America: Vol. II, p. 247; *Lygœus.*

ORIGINAL DESCRIPTION:

"Obscure rufous: posterior thighs five-spined; tergum red, margin lineate with black.

"Inhabits the United States.

"Body dull rufous, minutely and densely punctured; head triangular; stemmata sanguineous: antennæ, second and third joints black at their extreme tip, fourth joint dusky, pale at base; rostellum pale, black at tip; setæ black; thorax obsoletely indented longitudinally in the middle and transversely before the middle; posterior angles salient, acute, blackish at tip; scutel pale at tip; feet pale rufous, whitish at base; posterior thighs more robust, rufous at tip, five-spined beneath; pectus, postpectus, and head beneath, black in the middle; tergum red; margin with about four pale spots, and black lineolar edges to its segments.

"Length of body more than half an inch."

Claspers of male forked. The outer lobes the longer.

Length, 14 to 16 mm.; width across the pronotum, 3 to 3.7 mm.

Has not been reported before as occurring in Kansas.

DISTRIBUTION. It has been taken in Johnson, Douglas, Miami, Riley, Chautauqua, Cowley, Harper, Rooks, Graham and Trego counties.

GENUS *Alydus* Fabricius.

Van Duzee (1917) lists six species of the genus as occurring in North America north of Mexico. Fracker (1918) described a new species Of these seven species five are found in Kansas.

KEY TO THE KANSAS SPECIES OF *ALYDUS* (AFTER FRACKER).

PAGE

A. Pronotum with lateral angles blunt, and sides and lateral margins not distinctly paler than the disc.
  B. Claspers of male with caudomesal margins subparallel, caudal aspect narrow; female of *pluto* with lateral plates of hypopygium terminating in a tumid fingerlike process, sixth ventral segment with a distinct median carina; mainly mountain species.
    C. Antennæ with fourth segment shorter than second and third together, third subequal to second; body black, not densely pilose.....*pluto*, 389
    CC. Antennæ with fourth segment more than one-third longer than second and third together, third shorter than second; body variegated with fuscous, densely pilose .....*tomentosus*, 390
  BB. Claspers of male not with caudomesal margins parallel; lateral plates of female hypopygium flat, not tumid at tip, sixth ventral segment with carina short, indistinct or wanting.
    C. Claspers of male twisted, not arcuate; lateral plates of female hypopygium acute at apex; pronotum usually black; membrane infuscate. *eurinus*, 390
    CC. Claspers of male arcuate, divaricate at base and convergent at tip; lateral plates of female hypopygium broadly rounded at apex; pronotum usually with posterior two-thirds fulvous; membrane often spotted. *conspersus*, 391
AA. Pronotum with lateral angles acute and lateral margins pale; claspers of male with lateral expansion and acuminate tip; lateral plates of female hypopygium bluntly rounded, approximate at apex.....*pilosu'us*, 391

Alydus pluto Uhler.

(Pl. LXII, Figs. 12, 12A.)

Uhler, Philip Reese. Notice of the Hemiptera of the Western Territories of the United States, Chiefly from the Surveys of Dr. F. V. Hayden (in F. V. Hayden: Preliminary Report of the United States Geological Survey of Montana and Portions of Adjacent Territories for 1871): p. 403; 1872.

ORIGINAL DESCRIPTION:

"Intensely black, much more robust than *A. eurinus* Say. Head more robust, minutely scabrous, pubescent; the constricted portion of the collum shorter; eyes and ocelli prominent; the interorbital surface longitudinally impressed, almost to the line of the antennæ. Sides and underside of the head minutely granulated, punctured, and wrinkled. Antennæ either piceous black, or black, with the bases of the first, second and third joints pale piceous; the underside of base of the first whitish. Rostrum black, reaching to the intermediate coxæ. Pronotum very moderately convex, a little pubescent, coarsely, deeply punctured; the lateral margins slenderly carinated; the carina obsolete at the anterior angles, but considerably elevated on the moderately prominent posterior angles. Callosities broad, large, bald, minutely granulated each side, with two impressed points behind their middle. Propleuræ coarsely, confluently, deeply punctured, except anteriorly, where the punctures are fine; meso- and metapleuræ rather coarsely, irregularly granulated, coarsely punctured behind and below. Legs deep black, pubescent, or with the anterior and intermediate tibiæ pale piceous on the middle; posterior femora with five curved spurs from behind the middle to near the tip; at tip, with two or three close-set, very small teeth; tarsi pale piceous on the base of the first joint. Scutellum coarsely, remotely punctured. Corium less coarsely, rather remotely punctured; embolium smooth, minutely, sparsely, obsoletely punctured, minutely pubescent; membrane brownish-black, with long, close, very numerous nervures. Tergum red as far as the base of the antepenultimate segment, or only a little red on two or three of the basal segments; venter deep black, shining, immaculate, very minutely shagreened, pubescent at tip.

"Length to venter, 12-13 mm.; width across the humeri, 3 mm.

"Inhabits Colorado; Ross Fork, Idaho; Louisiana; and Kansas. The spines of the posterior femora vary in number from three to six; this variation occasionally occurs on the opposite sides of the same specimen. There seem to be about twenty nervures to the membrane, of which two or three are usually forked."

DISTRIBUTION. This species has been collected in Clark, Norton and McPherson counties.

Alydus eurinus (Say).

(Pl. LXII, Figs. 7, 7A.)

Say, Thomas. The Journal of the Academy of Natural Sciences of Philadelphia: Vol. IV, p. 324; 1824. The Complete Writings of Thomas Say on the Entomology of North America: Vol. II, p. 247; *Lygœus*.

ORIGINAL DESCRIPTION:

"Blackish, hairy, punctured; tergum black, disk rufous, margin with four yellowish spots; posterior thighs three-spined.

"Inhabits Missouri and Arkansas.

"Body blackish, hairy, punctured; head triangular; eyes prominent; antennæ, second and third joints dull testaceous, blackish at their tips; thorax densely punctured, mutic; hemelytra black-brown; feet black; tibiæ and first joint of the tarsi, dull testaceous, with black tips; posterior thighs three-spined beneath, and one or two smaller spines at tip; abdomen, reflexed margin with four yellowish spots; tergum rufous on the basal disk.

"Length about half an inch.

"The body of this insect is long and narrow; the diameter of the head which passes through the eyes is but little shorter than the breadth of the thorax."

SIZE. Length, 11 to 15 mm.; width, 2.3 to 3 mm.

COLOR. Color above variable from nearly wholly black to largely fuscous brown; connexivum black, each segment with a small orange-yellow spot near front angle; antennæ fuscous brown, basal segment and tips of second and third segments darker; tibiæ fuscous brown, darker near apex.

STRUCTURAL CHARACTERISTICS. Head finely and densely punctate; antennæ with third segment little shorter than the second, both together but little longer than the fourth. Pronotum with disk convex, but little narrowed in front, deeply and densely punctate, clothed with numerous rather coarse, erect black or brown hairs, as is the head. Scutellum slightly convex, coarsely but not densely punctate. Elytra finely and sparsely punctate. Abdomen slightly dilated at middle, the connexivum rarely narrowly exposed.

This species is easily confused with *Alydus pluto* Uhler if a superficial examination is made, but the genitalia of the two species is very distinct.

DISTRIBUTION. Has been taken in Douglas, Miami and Riley counties.

Alydus tomentosus Fracker.

Fracker, S. B. The Annals of the Entomological Society of America: Vol. XI, No. 3, p. 267; 1918.

ORIGINAL DESCRIPTION:

"Color black, mottled with dark brown; body and legs densely covered with long, fine, black and white setæ intermixed; form more robust than in *eurinus* and not so large as in *pluto*. Head black, marked on each side with a longitudinal flavescent anteocular line, slightly broken at tip of antenniferous tubercle and extending nearly to apex of jugum; also a short, pale fuscous vitta

caudoventrad of each eye. (One specimen in addition shows a small fuscous spot behind the ocelli). Antennæ fuscous, first, second and third segments black toward apex; fourth segment more than one-third longer than two preceding together, first shorter than second, subequal to third, and attaining apex of head. Rostrum piceous, paler at incisions, first segment longest, slightly longer than second, and subequal to two apical ones together, fourth one-half longer than third.

"Pronotum densely punctate, black, mottled with fuscous on posterior half of the disk and on the sides, sometimes with an indication of short mediodorsal and lateral marginal fulvous lines near anterior margin. Scutellum black, flavescent at tip. Corium castaneous, mottled with flavescent; membrane infuscate. Thorax and abdomen black beneath, densely hairy, sides of thorax rugose and deeply punctate. Scent-gland orifices well developed. Margins of abdomen minutely flavomaculate. Legs with the coxæ, trochanters and tibiæ castaneous, the latter black at tip; femora black, armed with three or four long spines. Claspers of the male with mesal margins subparallel, caudal surfaces slightly expanded laterally near tip.

"Size male, 10x2.6 mm.

"Holotype: male, from Fort Collins, Colo.

"Paratype: male, from Las Animas, Colo.; both in the Ball collection."

This species has not been reported as occurring in Kansas before.

DISTRIBUTION. It has been taken only in Norton county.

Alydus conspersus Montandon.

Montandon, A. L. Proceedings of the United States National Museum: XVI, p. 49; 1893.

ORIGINAL DESCRIPTION:

"Grayish above, sparsely hairy on the anterior part of the pronotum; head black, anterior margin and a longitudinal spot on the middle of the anterior part of pronotum black, the middle of this black spot sometimes with a very small longitudinal pale line. The posterior part of the pronotum and the elytra grayish with fine punctures, with castaneous and numerous irregular black spots. Membrane pale vitreous with darkish nervures and numerous round spots irregularly scattered on the surface; the greater part of the back of the abdomen red, base and extremity black. Connexivum black with a pale spot at the base of each segment. Body beneath black with metallic bronze reflections, especially on the abdomen. Antenna dark brown, with the basal two-thirds of the second and third joints pale. Legs black, the tibæ brownish, with the base and extremity darkish. First joint of the tarsi brownish, with the extremity black. Length, 10 to 11 mm."

This species is distinguished from *eurinus* by the much sparser and finer punctation of the pronotum, and by the fact that each one of these finer and sparser punctures bears minute appressed yellow hairs.

This species has not before been reported as occurring in Kansas.

DISTRIBUTION: This species has been taken in Rawlins and Riley counties.

Alydus pilosulus Herrich-Schaeffer.

(Pl. LXII, Figs. 5, 5A.)

Herrich-Schaeffer, Gottlieb August Wilhelm. Die Wanzenartigen Insection: Vol. VIII, p. 101, Fig. 870; 1848.

ORIGINAL DESCRIPTION (translated by writer):

"An ochre-fuscous *Alydus*, pilose; first to third segments of antennæ, tibiæ and tarsi testaceous, apex fuscous.

"Size and form similar to *A. calvaratus*, but more slender; the brownish

ochre-yellow ground color appears as three longitudinal lines on the anterior part of head and as side stripes, and on the anterior black part of prothorax as a median line. Underside of head, metasternum, and the tibiæ near their ends, fresh green.

"Male from North America; from Sturm."

SIZE. Length, 10 to 14 mm.; width across humeri, 2 to 2.7 mm.

COLOR. Color above usually grayish yellow, the head fuscous, with clypeus and a line on each side dull yellow, a narrow stripe below eye and the edge of side margins of pronotum whitish; apical third of pronotum, tips of first three segments of antennæ, tips of tibiæ and tarsi fuscous or black; terminal segment of antennæ dusky; membrane pale brown.

STRUCTURAL CHARACTERISTICS. Elongate, slender, depressed above, subconvex beneath. Pronotum longer than wide, the sides straight and converging, the apex about two-thirds the width of base; humeral angles acute, slightly projecting forward; hind margin subtruncate. Elytra finely and densely punctate.

DISTRIBUTION. It has been taken in Doniphan, Johnson, Douglas, Franklin, Wilson, Chautauqua, Greenwood, Pottawatomie, Riley, Reno, Harper, Pratt, Phillips, Clark, Finney, Scott, Rawlins, Cheyenne and Cowley counties.

GENUS *Tollius* Stal.

Van Duzee in his catalogue lists two species of this genus as occurring in North America north of Mexico. One of these species has been taken in Kansas.

Tollius curtulus (Stal).

Stal, Carl. Kongliga Svenska Fregattens Eugenies resa omkring Jorden, Insekter: p. 234; 1859; *Alydus*.

DESCRIPTION (based upon that of Fracker (1918) and Blatchley (1926):

SIZE. Length, 9.5 to 12 mm.; width, 2.2 to 3.5 mm.

COLOR. Head fuscous with a median and two lateral lines reddish-yellow antennæ pale, the first and fourth segments darker. The pronotum dull yellow sprinkled with fuscous dots and punctures; disk marked with a pair of fuscous slightly divergent lines. The scutellum fuscous, the tip pale. Elytra with numerous small fuscous blotches; membrane pale, mottled with pale fuscous blotches. Beneath with sides fuscous and middle reddish-brown. Femora mottled, sometimes with yellow rings.

STRUCTURAL CHARACTERISTICS: An elongate-oblong species. Head elongate triangular, almost as long as the pronotum. First segment of antennæ shorter than the head, second and fourth subequal, third slightly shorter. Pronotum subquadrangular, slightly longer than wide, lateral margins straight, hind margins subtruncate, not toothed. Elytra as wide as the abdomen, the connexivum not exposed; membrane reaching tip of the abdomen. Front and middle coxæ and all tibiæ unarmed; hind femora moderately swollen and with a row of stout spines beneath on the outer margin. The scent-gland orifices obsolete.

This species has not been recorded from Kansas before.

DISTRIBUTION. The writer has seen but one specimen from Kansas, and that one was taken in Wallace county.

GENUS *Stachyocnemus* Stal.

One species of this genus occurs in North America north of Mexico. This one is found in Kansas.

Stachyocnemus apicalis (Dallas).

(Pl. LXII, Figs. 6, 6A.)

Dallas, William S. List of the Specimens of Hemipterous Insects in the British Museum: Vol. II, p. 479; 1852; *Alydus*.

SIZE. Length, 7.5 to 8 mm.; width across humeri, 2 to 2.5 mm.

COLOR. General color yellowish grey or black; pronotum with a large brown or piceous triangle on base, extending forward to the apex by a narrow median line; connexivum piceous, the upper front angle of each segment grayish-yellow; antennæ grayish-brown, the fourth segment darker; under surface and femora varying from pale grayish sprinkled with fuscous dots to piceous.

STRUCTURAL CHARACTERISTICS. Scent-gland orifices obsolete; the shape of the male genital capsule conceals the claspers; head triangular, much narrowed and produced in front of antennæ; antennæ with first segment widened to tip, second and third subequal, slender, fourth longer and thicker than others. Pronotum as wide at base as long, with posterior margin bearing a mesal tooth. Hemelytra reaching to or slightly surpassing the tip of abdomen in length. Anterior and intermediate femora and tibiæ slender and unarmed; posterior femora thickened, attaining apex of abdomen and armed beneath with two rows of acute teeth; posterior tibiæ armed with two rows of strong spines.

This is the first time that this species has been recorded as occurring in Kansas.

DISTRIBUTION. This species has been taken in Clark and Morton counties.

SUBFAMILY CORIZINÆ (MAYR).

This subfamily is represented in North America north of Mexico by three tribes. Representatives of all three of these tribes occur in Kansas.

KEY TO THE TRIBES OF SUBFAMILY CORIZINÆ.

		PAGE
A.	Anterior angles of prothorax projecting forward in an acute spine.....Harmostini,	393
AA.	Anterior angles of prothorax obtuse or rounded.	
B.	Body over 10 mm. long, hemelytra opaque.....Leptocorini,	399
BB.	Body not over 9 mm. long, hemelytra hyaline.....Corizini,	395

TRIBE HARMOSTINI (STAL).

Van Duzee lists three genera of this tribe as occurring in North America north of Mexico. Two of these genera occur in Kansas.

KEY TO KANSAS GENERA OF HARMOSTINI.

		PAGE
A.	Abdomen extended laterally beyond the margins of hemelytra, pronotum with a distinct median impression.....*Aufeius*,	395
AA.	Abdomen not extended laterally beyond the margins of hemelytra; pronotum without a distinct median impression.....*Harmostes*,	394

GENUS *Harmostes* Burmeister.

This genus is represented in North America north of Mexico by six species. Two of them occur in Kansas.

KEY TO KANSAS SPECIES OF *HARMOSTES*.

PAGE

A. Basal segment of antenna scarcely or slightly surpassing apex of head; second and third segments subequal ..... *fraterculus*, 396

AA. Basal segment of antenna surpassing the apex of head about one-half its length; second segment shorter than the third..... *reflexulus*, 394

Harmostes reflexulus (Say).

(Pl. LXII, Figs. 2, 2A.)

Say, Thomas. Descriptions of new species of Heteropterous Hemiptera of North America. New Harmony, Ind.: p. 10; 1832. Transactions of the New York State Agricultural Society: Vol. XVII, p. 768; 1857 (reprinted by Fitch). The Complete Writings of Thomas Say on the Entomology of North America: Vol. I, p. 323; *Syromastes*.

ORIGINAL DESCRIPTION:

"Body reddish-brown, with rather large, confluent punctures; head not extending more than half the length of the basal joint of the antennæ, obviously carinate between the antennæ; tubercles each side of the antennæ; acute; antennæ, first joint robust, rough, much narrowed; second joint shorter than the third; terminal joint half as long as the third; thorax, lateral margins a little reflected, the edge concavely arcuated; posterior angles rounded, anterior angles prominent, acute; scutel narrowed before the tip; hemelytra, corium yellowish, rufous near the scutel; nervures very distinct; lateral edge a little reflected; membrane hyaline; beneath, greenish-yellow feet pale rufous; posterior thighs dilated, spinous beneath.

"Length, one-fourth of an inch.

"The rostrum hardly reaches the posterior coxæ. The last joint of the antennæ is elongate-oval and much shorter than the preceding joint, as defined by Latreille in this genus."

Length, 7.5 to 9 mm.; width, 2.2 to 2.7 mm.

DISTRIBUTION. It has been collected in Atchison, Douglas, Bourbon, Osage, Lyon, Riley, Dickinson, Jewell, Ellsworth, Reno, Norton, Hodgeman, Clark, Rawlins, Cheyenne, Greeley, Hamilton, Morton, Stevens and Clark counties.

Harmostes fraterculus (Say).

Say, Thomas. Descriptions of new species of Heteropterous Hemiptera of North America. New Harmony, Ind.; p. 10; 1832. Transactions of the New York State Agricultural Society: Vol. XVII, p. 768; 1857 (reprinted by Fitch). The Complete Writings of Thomas Say on the Entomology of North America: Vol. I, p. 324; *Syromastes*.

ORIGINAL DESCRIPTION:

"Anterior point of the head extending nearly to the tip of the first joint of the antennæ.

"Inhabits Georgia and Indiana.

"Closely resembles the preceding species (*H. reflexulus* Say), but is smaller; the anterior tip of the head extends nearly or quite to the tip of the first joint of the antennæ; the lateral margin of the corium is very distinctly punctured with black; the membrane is marked with a longitudinal obsolete brown line and small points; the general color is darker; the tergum is sanguineous, black at base.

"Length, less than one-fourth of an inch.

"A small specimen was sent to me by Mr. Oemler, from the vicinity of Savannah, and I have obtained the two sexes in Indiana."

This species has not been reported from Kansas before.

DISTRIBUTION. This species has been taken in Douglas county.

GENUS *Aufeius* Stal.

This genus is represented in North America north of Mexico by one species. This one is found in Kansas.

Aufeius impressicollis Stal.

(Pl. LXII, Figs. 8, 8A.)

Stal, Carl. Enumeratio Hemipterorum: Vol. I, p. 222; 1870.

ORIGINAL DESCRIPTION (translated by writer):

"Pale yellowish-gray, sprinkled with fuscous, apical segment of antennæ and disk of mesosternum fuscous or black. Male, female, 5 to 6 mm. long; width of thorax, 1½ to 2 mm.

"Habitat: Mexico, Texas. (Mus. Holm.)

"First segment of antennæ sparsely granulated, second and fourth segments equal in length, the third scarcely longer. Head without distinct punctures, sides granulated. Thorax distinctly punctated and sprinkled with fuscous, disk impressed on both sides with short red lines; anterior part depressed; lateral margin sinuate before the middle, minutely crenulated. Scutellum totally punctated. Hemelytra hyaline, membranaceous, veins opaque and elevated, frequently sprinkled with fuscous, exterior veins of the corium granulated on both sides. Membrane transparent, immaculate. The underside occasionally sprinkled with minute fuscous and sides of pectus and venter supplied with densely fuscous sprinkled lines. Pectus distinctly punctated. Apex of abdomen of male narrowly truncate; of the female widely truncate, last ventral segment of the male with apex sinuate, in female produced to apex of abdomen, subrounded medially. Legs variegated fuscous."

DISTRIBUTION. This species has been taken in Douglas, Riley, Kingman, Decatur, Sheridan, Gove, Rawlins, Logan, Kearny and Finney counties.

TRIBE CORIZINI (STAL).

This tribe is represented in North America north of Mexico by one genus (*Corizus* Fallen). This genus is represented by fourteen species, five of which occur in Kansas.

KEY TO THE KANSAS SPECIES OF *CORIZUS*

PAGE

A. Transverse impression of pronotum ending in a loop.....*viridicatus*, 396

AA. Transverse impression of pronotum not ending in a loop.

B. Last segment of the abdomen short and broad, its apex truncate in female, evenly rounded in male .....*hyalinus*, 396

BB. Last segment of the abdomen distinctly longer, its apex acute or rounded in female, obtusely rounded in male.

C. Scutellum broad at tip, rounded.....*indentatus*, 398

CC. Scutellum narrow at the tip and pointed.

D. Connexivum unspotted .....*lateralis*, 398

DD. Connexivum spotted .....*sidæ*, 397

Corizus hyalinus (Fabricius).

(Pl. LXII, Figs. 3, 3A.)

Fabricius, Johann Christian. Entomologia systematica emendata et aucta, secundum classes, ordines, genera, species, adjectis synonymis, locis, observationibus: Vol. IV, p. 168; 1794; *Lygæus.*

ORIGINAL DESCRIPTION (translated by the writer):

"A black Lygæus with margins of the thorax reddish; elytra hyaline with apex fuscous; hyaline punctures.

"Habitat: An island of America. Doctor Pflug.

"Small. Antennæ black. Head black, vertex with reddish punctures. Thorax black, lateral margins reddish. Scutellum black, apex reddish. Elytra hyaline, apex fuscous with large hyaline punctures. Wings white. Body black beneath with red lines. Legs black."

SIZE. Length, 5.5 to 6.4 mm.

COLOR. Above yellow, red, or sometimes very dark, ornamented with darker markings; sternum black; transverse suture of pronotum prominent and black; connexivum not distinctly spotted.

STRUCTURAL CHARACTERISTICS. Posterior lateral angles of metapleura produced into an acute rounded angle; scutellum narrow and acute apically, sides nearly straight; transverse suture of pronotum prominent and black; wings extending much beyond the apex of the abdomen; last segment of the abdomen short, truncate in the female, evenly rounded in the male.

This species is cosmopolitan in distribution, but has not been reported from Kansas before.

DISTRIBUTION. It has been taken in Atchison, Douglas, Miami, Allen, Riley, Sedgwick, Reno and Logan counties.

Corizus viridicatus Uhler.

Uhler, Philip Reese. Notices of the Hemiptera of the Western Territories of the United States, chiefly from the Surveys of Dr. F. V. Hayden (in F. V. Hayden: Preliminary Report of the United States Geological Survey of Montana and Portions of Adjacent Territories for 1871): p. 404; 1872.

ORIGINAL DESCRIPTION:

"Slender, form of *C. truncatus,* Ramb. Pale green; front of the face rather blunt, the end of the tylus decurved; upper surface of the head with whitish sericeous pubescence, scabrous, uneven, minutely punctured; the underside obsoletely wrinkled, finely pubescent. Antennæ slender, clothed with remote long hairs; the basal joint extending beyond the tylus, freckled with dark brown, and usually with a short stripe on the underside; the apical joint rather slender, hardly longer than the preceding, more or less orange, at base paler; the second and third joints subequal, faintly streaked with brown both above and below. Rostrum reaching not quite to the posterior coxæ; the middle line and the apical joint, excepting at its base, dark piceous. Face and cranium sometimes with a few small spots and streaks of brown or black on the middle and near the eyes. Pronotum with long pubescence, coarsely punctured in irregular, transverse rows, the callosities forming a prominent ridge nearly across the entire width; antepectus and pleura uneven, a little less coarsely punctured; the meso- and metapleura uneven, a little more coarsely punctured; the posterior flap of the metapleura oblique truncated with the upper angle rounded at tip, and, together with the acetublar caps,

minutely punctured. Legs greenish-yellow, the femora rather robust, dotted with brown in rows, those of the upper inward side sometimes confluent in a large patch; tibiæ freckled with brown; at tip and the tips of each of the tarsal joints brownish, the nails piceous. Scutellum uneven, irregularly, somewhat coarsely punctured, the lateral edge recurved, the tips sunken, and its apex almost acute. Corium hyaline, rather finely punctured, the clavus sometimes blackish, or streaked with black; costal and base broadly coriaceous; the nervures usually with a few blackish points and streaks; membrane hyaline. Tergum black on the two or three basal segments, very coarsely punctured at base, and a little less coarsely on the disk; the apex with a black streak running from the penultimate segment to the tip, narrowing posteriorly; the antepenultimate segment often with two or three black dots on the disk; connexivum immaculate, minutely punctured. Venter immaculate, minutely wrinkled and shagreened, finely pubescent. The punctation of the surface is sometimes brownish, either above, or both above and below.

"Length, 5-6 mm.; width across the humeri, 1¾ to 2 mm.

"This species is quite unlike any of the others thus far discovered in the United States, in slenderness and neatness of proportions, as well as the bright freshness of its colors when recent. It inhabits Colorado, Nebraska, and Dakota."

This species is closely related to *Corizus crassicornis* Linnæus.

The writer has found but one specimen that has been collected in Kansas. That one was collected in Rawlins county.

There are no records that this species has been collected in Kansas before.

Corizus sidæ (Fabricius).

(Pl. LXII, Figs. 4, 4A.)

Fabricius, Johann Christian. Entomologia systematica emendata et aucta, secundum classes, ordines, genera, species, adjectis synonymis, locis, observationibus: Vol. IV, p. 169; 1794; *Lygæus.*

ORIGINAL DESCRIPTION (translated by the writer):

"An ash-colored *Lygæus,* sprinkled with fuscous; elytra hyaline, fuscous punctate; antennæ clavate.

"Habitat: South America. Doctor Pflug.

"Small. Antennæ pale, last segment stout, fuscous. Head, thorax, scutellum, body and legs ash-colored, sprinkled with fuscous. Elytra whitish-hyaline with many scattered fuscous punctures. Wings white, immaculate. Abdomen coal black above with an ash-colored band."

SIZE. Length of female, 5.6 to 6.2 mm.; male, 4.4 to 5.5 mm. Width of female, 2.9 to 3.1 mm.; male, 2 to 2.5 mm.

COLOR. The general color varies from dark brown to gray or reddish-yellow, usually rather thickly covered over with very small brown or brightish-red spots; dark line from head extends back on the pronotum, widens and fades out; small black spots cover the body and legs.

STRUCTURAL CHARACTERISTICS. Head narrowly triangular; first segment of antennæ scarcely reaching apex of the head; abdomen short and much wider than the thorax; wings longer than the abdomen.

DISTRIBUTION. It has been collected in Douglas, Wilson, Riley and Decatur counties.

Corizus lateralis (Say).

(Pl. LXII, Figs. 9, 9A.)

Say, Thomas. Journal of the Academy of Natural Sciences of Philadelphia: IV, p. 320; 1825. Complete Writings of Thomas Say on the Entomology of North America: II, p. 245; *Coreus.*

ORIGINAL DESCRIPTION:

"Pale reddish-brown, punctured; hemelytra with spotted nervures; feet, pale, spotted.

"Body somewhat hairy, pale reddish-brown, with much dilated approximate punctures; head somewhat unequal, two obsolete impressed lines between the antennæ, a blackish spot behind the eye; eyes dusky, pale before; antennæ brownish, with sparse hairs; terminal joint as long as the preceding one, dilated, with cinereous pubescence; thorax with three obsolete dusky spots before, and an impunctured whitish line abbreviated before; scutel with a longitudinal, impunctured whitish line; hemelytra, nervures with black spots, interstitial spaces membranaceous; membranaceous tip immaculate, whitish beneath, with a distinct lateral red line; feet hairy, pale; thighs spotted with reddish-brown; pectus rufous; venter yellowish or rufous.

"Length, more than one-fourth inch."

Scutellum constricted near apical third, coarsely not densely punctate, its edges raised and apex subacute. Sixth dorsal segment of female broadly triangular with apex rounded; sixth dorsal segment of male prolonged, subspatulate. Length, 5 to 7.5 mm.; width across humeri, 2 to 3 mm.

DISTRIBUTION. Has been collected in Doniphan, Leavenworth, Johnson, Miami, Bourbon, Allen, Douglas, Wilson, Riley, Butler, Sedgwick, Sumner, Kingman, Reno, Norton, Graham, Clark, Lane, Scott, Rawlins, Cheyenne, Morton and Stevens counties.

Corizus indentatus Hambleton.

Hambleton, J. C. Annals of the Entomological Society of America: Vol. I, p. 139; 1908.

ORIGINAL DESCRIPTION:

"Somewhat resembling *scutatus*, but smaller and more hairy. Length of female, 4.5 to 6 mm.; width, 2 to 3 mm. Male, length, 4.5 to 5 mm.; width, 2 to 2.5 mm.

"Head: Antenniferous tubercles small but rather sharp, very close to the eyes. Rostral lobes short and obscure. First segment of antennæ reaches a little beyond the apex of the head. Upper surface rough and tubercular.

"Pronotum tubercular, especially in the region of the transverse suture, which is often difficult to trace on this account. This suture forms a rather deep depression on either side of the median line. Scutellum rather broad and rounded at apex; with borders slightly raised near the end, which is not excavated.

"Abdomen but little wider than pronotum. Genitalia pretty much as in *scutatus*, though the entire sixth segment of the female is relatively shorter, and the ventral plate in the male is not so narrow at its middle point. Wings a little longer than abdomen. Whole insect covered with rather dense hair.

"Color, reddish-brown with no distinctive markings. The pronotum is sometimes irregularly blotched with black, and its posterior border with the base of the scutellum, dark or almost black. Beneath the color is lighter, often tinged with yellow and minutely spotted with red. Sternum black, and often a dark brown line on either side of abdomen below, near the borders. The first and second segments of disk of abdomen are black, and the remaining four may be black also, but usually brown. The third has two small spots on the an-

terior margin and the fourth a rather large oval spot at its center; the fifth has two smaller oblique spots at its anterior margin and several small round spots below these; the sixth with the conventional yellow lateral stripes and the long black spot between them. Connexivum alternating dark and light, sometimes one predominating and at others the other. The dark portions are frequently ornamented with one or more small round spots of a lighter color. The legs are reddish-yellow spotted with brown. Wing veins with a few brown spots. Membrane with a slight reddish tinge."

In so far as the writer can ascertain, but one specimen of this species has been collected in Kansas. That one was taken in Riley county, and is in the entomological collection at the Kansas State Agricultural College.

This is the first time that this species has been recorded as having been collected in Kansas.

TRIBE LEPTOCORINI VAN DUZEE.

Van Duzee lists two genera under this tribe in his catalogue. Representatives of both of these genera are found in Kansas.

KEY TO THE KANSAS GENERA OF LEPTOCORINI.

		PAGE
A.	Bucculæ less than half the length of the head; rostrum scarcely passing hind coxæ ..... *Leptocoris*,	399
AA.	Bucculæ reaching the base of the head; rostrum reaching to or beyond the second abdominal segment ..... *Jadera*,	400

GENUS *Leptocoris* Hahn.

This genus is represented in North America north of Mexico by one species. This one is found in Kansas.

Leptocoris trivittatus (Say).

(Pl. LXI, Figs. 1, 1A.)

Say, Thomas. Journal of the Academy of Natural Sciences of Philadelphia: IV, p. 322; 1825. Complete Writings of Thomas Say on the Entomology of North America: II, p. 246; *Lygæus*.

ORIGINAL DESCRIPTION:

"Black, thorax trilineate, and hemelytra margined with rufous.

"Body black; eyes and stemmata sanguineous; thorax mutic; two indented transverse lines near the head, of which the anterior one is curved in the middle; three bright rufous lines, of which two are marginal; posterior edge obscurely rufous, hemelytra, coriaceous portion with a rufous exterior and posterior margin, membranaceous tip immaculate; trochanter rufous: tergum rufous with three lateral black punctures; venter, margin and middle rufous.

"Length, nine-twentieth inch."

Length of species examined, 11 to 13.5 mm.; width, 3 to 4 mm.

This is the common box-elder bug. It is more numerous in the autumn. It does considerable damage to the leaves of the box elder (*Acer negundo* L.) and is also said to damage fruit such as peaches, plums and apples.

DISTRIBUTION. It has been taken in Douglas, Riley, Lincoln, Stafford, Rush, Ellis, Meade, Finney, Sheridan, Thomas, Logan, Cheyenne, Sherman and Morton counties.

GENUS *Jadera* Stal.

Van Duzee reports that there are three species of this genera found in North America north of Mexico. Only one (*Jadera hœmatoloma*) of these three is found in Kansas.

Jadera hœmatoloma (Herrich-Schaeffer).

(Pl. LXI, Figs. 3, 3A.)

Herrich-Schaeffer, Gottlieb August Wilhelm. Die Wanzenartigen Insecten: Vol. VIII, p. 103, Fig. 873; 1848; *Leptocoris.*

ORIGINAL DESCRIPTION (translated by the writer):

"A black Leptocoris, with the lateral margins of thorax and all the upper part of the abdomen bright red; eyes and ocelli brown.

"A long, rather pointed oval along each side. The wing covers extended somewhat convexly. The fore margin of thorax thrown up into a broad roll, punctured with large round cells. Dull black; eyes and ocelli rust red; the side margins of the thorax and the entire free margin of the abdomen bright scarlet red.

"This species has the same habitat as the Lygæidæ; the head is distinctly three-parted anteriorly; the fore margin of the thorax is thrown up into a broad roll; the membrane has a vein running across the base and many partly anastomized longitudinal veins. The wing covers extend far beyond the abdomen. Antennæ, head, and the anterior half of the thorax, likewise the legs, are clothed with long bristlelike hairs.

"From Mexico; from Sturm."

DISTRIBUTION. It has been collected in Douglas, Riley, Cloud, Decatur and Sherman counties.

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EXPLANATION OF PLATES.

PLATE LX.

Leptoglossus phyllopus (Linnæus).

FIG. 1. Genital capsule of male, ventral aspect.

FIG. 1A. Left clasper, cephalolateral aspect.

Euthochtha galeator (Fabricius).

FIG. 2. Genital capsule of male, dorsal aspect.

FIG. 2A. Left clasper, median aspect.

Leptoglossus oppositus (Say).

FIG. 3. Genital capsule of male, ventral aspect.

FIG. 3A. Left clasper, caudolateral aspect.

Merocoris distinctus Dallas.

FIG. 4. Genital capsule of male, dorsal aspect.

FIG. 4A. Left clasper, ventral aspect. (Scale 2 × the above.)

Archimerus alternatus (Say).

FIG. 5. Genital capsule of male, dorsal aspect.

FIG. 5A. Left clasper, caudolateral aspect.

Leptoglossus clypealis Heidemann.

FIG. 6. Genital capsule of male, dorsal aspect.

FIG. 6A. Left clasper, caudolateral aspect.

Acanthocephala terminalis (Dallas).

FIG. 7. Genital capsule of male, dorsal aspect.

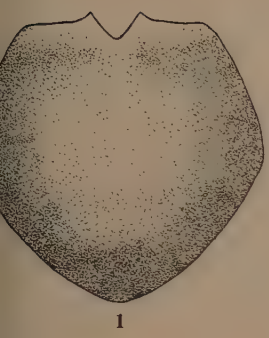
FIG. 7A. Left clasper, caudolateral aspect.

Mozena obesa Montandon.

FIG. 8. Genital capsule of male, dorsal aspect.

FIG. 8A. Left clasper, caudolateral aspect.

PLATE LX.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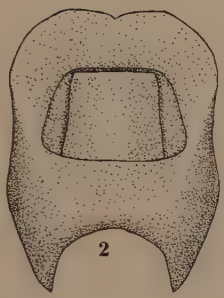
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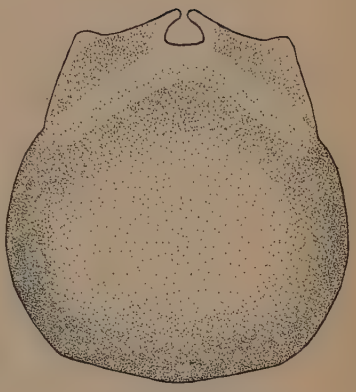
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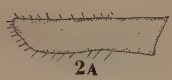
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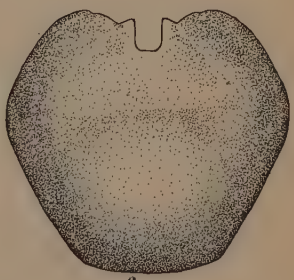
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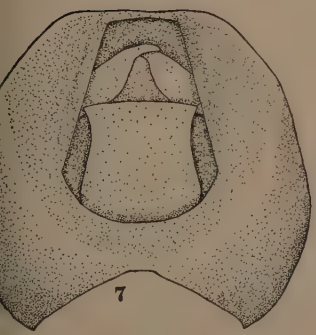
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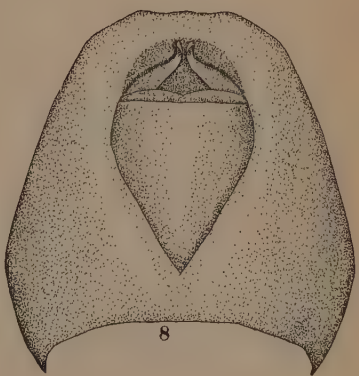
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PLATE LXI.

Leptocoris trivittatus (Say).

FIG. 1. Genital capsule of male, ventral aspect.

FIG. 1A. Left clasper, lateral aspect.

Chelinidea vittiger Uhler.

FIG. 2. Genital capsule of male, dorsal aspect.

FIG. 2A. Left clasper, caudolateral aspect.

Jadera hæmatoloma (H.-S.).

FIG. 3. Genital capsule of male, ventral aspect.

FIG. 3A. Left clasper, lateral aspect.

Chariesterus antennator (Fabricius).

FIG. 4. Genital capsule of male, dorsal aspect.

FIG. 4A. Left clasper, caudolateral aspect. (Scale, 2 × above.)

Anasa armigera (Say).

FIG. 5. Genital capsule of male, dorsal aspect.

FIG. 5A. Left clasper, caudolateral aspect. (Scale, 2 × above.)

Catorhintha mendica Stal.

FIG. 6. Genital capsule of male, dorsal aspect.

FIG. 6A. Left clasper, caudolateral aspect. (Scale, 2 × above.)

Anasa tristis (De Geer).

FIG. 7. Genital capsule of male, dorsal aspect.

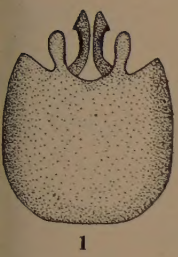
FIG. 7A. Left clasper, cephalolateral aspect. (Scale, 2 × above.)

Anasa repetita Heidemann.

FIG. 8. Genital capsule of male, dorsal aspect.

FIG. 8A. Left clasper, caudolateral aspect.

PLATE LXI.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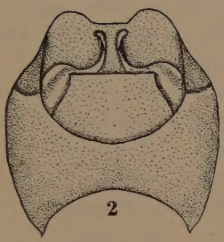
1A

2A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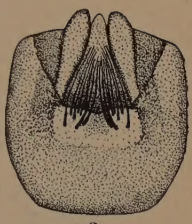
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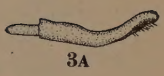
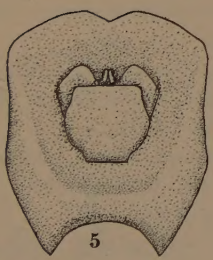

3A

4

4A

5A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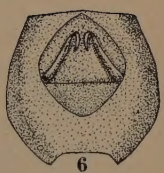
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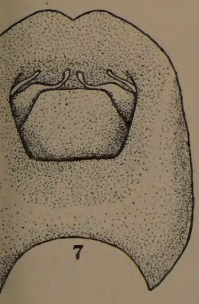
6A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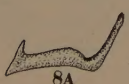

8A

7A

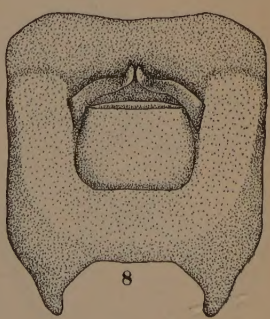

8

PLATE LXII.

Coriomeris humilis (Uhler).

FIG. 1. Genital capsule of male, dorsal aspect.

FIG. 1A. Left clasper, dorsal aspect.

Harmostes reflexulus (Say).

FIG. 2. Genital capsule of male, ventral aspect.

FIG. 2A. Left clasper, lateral aspect. (Scale, 2 × above.)

Corizus hyalinus (Fabricius).

FIG. 3. Genital capsule of male, ventral aspect.

FIG. 3A. Left clasper, lateral aspect.

Corizus sidæ (Fabricius).

FIG. 4. Genital capsule of male, ventral aspect.

FIG. 4A. Left clasper, lateral aspect.

Alydus pilosulus H.-S.

FIG. 5. Genital capsule of male, dorsal aspect. *cl*, clasper; *sh*, sur- capsular hook.

FIG. 5A. Left clasper, lateral aspect.

Stachyocnemus apicalis (Dallas).

FIG. 6. Genital capsule of male, dorsal aspect.

FIG. 6A. Left clasper, lateral aspect.

Alydus eurinus (Say).

FIG. 7. Genital capsule of male, dorsal aspect.

FIG. 7A. Left clasper, lateral aspect. (Scale, 2 × above.)

Aufeius impressicollis Stal.

FIG. 8. Genital capsule of male, ventral aspect.

FIG. 8A. Left clasper, lateral aspect. (Scale, 2 × above.)

Corizus lateralis (Say).

FIG. 9. Genital capsule of male, ventral aspect.

FIG. 9A. Left clasper, lateral aspect. (Scale, 2 × above.)

Megalotomus 5-spinosus (Say).

FIG. 10. Genital capsule of male, dorsal aspect.

FIG. 10A. Left clasper, lateral aspect.

Darmistus subvittatus Stal.

FIG. 11. Genital capsule of male, caudal aspect.

Alydus pluto Uhler.

FIG. 12. Genital capsule of male, dorsal aspect.

FIG. 12A. Left clasper, lateral aspect. (Scale, 2 × above.)

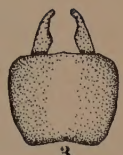
PLATE LXII.

1

2A

2

3A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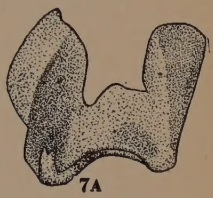
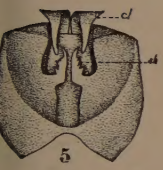
1A

4


7A

4A



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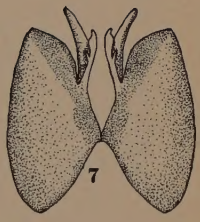

7

5A

6A

8

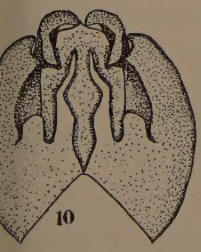
9A

10A

8A

9

11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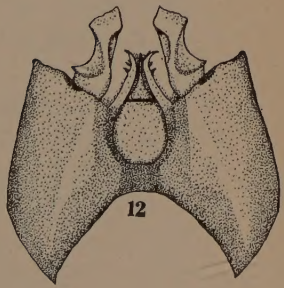
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12A